Methods: Patients with confirmed molecular diagnosis of vEDS presenting at two tertiary referral centers from 2000 to 2012 were reviewed. Data collected included demographics, family history, vascular pathology, operative details, and outcomes. To replicate the phenotype-genotype correlation a second cohort was reviewed using data from the Genetically Triggered Thoracic Aortic Aneurysms and Cardiovascular Conditions Registry (GenTAC), a National Institutes of Health-funded multicenter database.

Results: A total of 62 cases (34% male, 75% with positive family history, 15% HI) were identified. Arterial aneurysms and dissections were seen in 38 (62%) cases. Median age at initial vascular presentation was 41 (range 39-58) years in the HI group vs 33 (range 17-68) years in MIS group. Aortic and mesenteric arterial involvement was more common in the HI than MIS group (44% vs 15% and 44% vs 23%, respectively). The mortality was 0% in the HI group and 17% in the MIS group. The GenTAC registry enrolled 103 cases (29% male, 55% with positive family history, 6% HI). Median age at diagnosis was 28 (range 1-63) years. Once again, aortic involvement was more common in the HI vs MIS group (50% vs 10%).

Conclusions: Aortic and mesenteric arterial involvement in vEDS appears to be related to the underlying mutation type, with the HI cases having milder disease and later presentation. Molecular diagnosis is warranted in vEDS cases as it predicts postoperative outcomes and guides surveillance.

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S3: SVS Plenary Session III

SS10.

Gender Differences After Carotid Endarterectomy (CEA) and Carotid Artery Stenting (CAS) in the Society for Vascular Surgery Vascular Registry® (SVS-VR)

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Objectives: While optimal treatment of carotid stenosis remains unclear, available data suggest that women have higher risk of adverse events after carotid revascularization. SVS-VR data was used to determine the impact of gender after CEA and CAS.

Methods: 10,319 patients (41% women) underwent CEA (6518) and CAS (3801). The primary end point was a composite of death, stroke and myocardial infarction (MACE) at 30-days. The effect of symptom status and gender on outcomes was also analyzed.

Results: There was no difference in age between genders, but men were more likely to be symptomatic (41% v 39%). Women were more likely to have hypertension and COPD while men had a higher prevalence of CAD and smoking history. For disease etiology in CAS, restenosis was more common in women (28% v 21%) while radiation was higher in men (7% vs 3%). MACE was lower for CEA in all patient groups in both genders ($P < .05$ for all comparisons between CEA and CAS). Comparing women and men (Table), there were no statistically significant differences in MACE for either CEA (4% vs 4%) or CAS (7% vs 7%), which remained even after stratification by symptomatology and multivariate risk adjustment.

Conclusions: In this large, real-world analysis, women and men demonstrated similar results after CEA or CAS. These data suggest that, contrary to previous reports, women derive similar benefits as men from carotid revascularization. However, CAS is associated with inferior outcomes compared to CEA for both women and men, regardless of symptom status.

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Table. 30-day MACE by procedure

Primary outcome	*Women*	*Men*	P *value*
All CEA	4.09% (110/2689)	4.05% (155/3829)	.9492
All CAS	7.18% (108/1504)	6.88% (158/2297)	.7453
Symptomatic CEA	5.91% (57/964)	5.39% (81/1502)	.5910
Symptomatic CAS	8.31% (56/674)	9.47% (101/1067)	.4402
Asymptomatic CEA	3.07% (53/1725)	3.18% (74/2327)	.9274
Asymptomatic CAS	6.27% (52/830)	4.63% (57/1230)	.1092
All Symptomatic	6.90% (113/1638)	7.08% (182/2569)	.8527
All Asymptomatic	4.11% (105/2555)	3.68% (131/3557)	.4194

SS11.

Progression of Carotid Artery Stenosis Is Associated With the Occurrence of Subsequent Ipsilateral Ischemic Events and Stroke: Results From the ACSRS Study

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Objectives: To determine the association between progression of internal carotid artery stenosis and subsequent ipsilateral cerebral ischemic events (AF, TIA or stroke) in the Asymptomatic Carotid Stenosis and Risk of Stroke (ACSRS) Study.

Methods: 1121 patients with asymptomatic carotid stenosis 50-99% in relation to the bulb diameter were followed-up 6-monthly clinically and with carotid duplex

(4 year mean follow). Stenosis was graded using a combination of velocities and velocity ratios, including PSVic/EDVcc, into six groups: 50%-60%, 60%-70%, 70%-80%, 80%-90%, 90%-95% or 95%-99%. Progression or regression was considered present if there was a change to adjacent groups that persisted for at least two consecutive visits.

Results: Regression occurred in 43 (3.8%), no change in 856 (76.4%), progression in 190 (17.0%) and occlusion in 32 (2.8%) patients. Ipsilateral ischemic event rate was 0% with regression, 10.3% with no change, 17.4% with progression and 28.1% with occlusion (χ^2, $P < .001$). The corresponding values for stroke were 0%, 4.7%. 7.9% and 12.5%, respectively (χ^2, $P = .029$).

Using Kaplan-Meier curves, in the subgroup of patients with stenosis 70-95% the average annual ipsilateral ischemic event rate was 2.25% in patients with regression or absence of change and 4.75% in patients with progression ($P < .001$; OR, 2.15, 95% CI, 1.44-3.21). The corresponding values for stroke were 1.12% and 2.50% ($P = .025$; OR, 2.01, 95% CI, 1.14-3.54). In the subgroup of occlusion the average annual ipsilateral ischemic event rate was 5.6% and for stroke 2.6%.

In a logistic regression analysis, the severity of the final stenosis ($P = .005$; OR, 1.28; 95% CI, 1.08-1.53) and progression ($P = .034$; OR, 1.47; 95% CI, 1.03-2.10) were both independent predictors of ipsilateral ischemic events.

Conclusions: The degree of stenosis and progression are both associated with the occurrence of ischemic events and stroke. Progression identifies a group at increased risk of stroke.

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SS13.

Natural History of Asymptomatic Severe Carotid Artery Stenosis

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Objectives: Although level-1 evidence supports carotid endarterectomy (CEA) for stroke prevention in patients with asymptomatic severe (>70%) carotid stenosis (ASCAS), medical therapy has been promulgated by some as equally effective. The goal of this study is to determine the natural history of medically treated ASCAS.

Methods: Patients with ASCAS were identified by Duplex (index study 2005-06) and included if they were treated with medical therapy (for comorbidities or patient preference). Patients were excluded if they had a carotid intervention within 6 months of the index Duplex. Aspirin and statin use (including LDL) was recorded for each patient. The mean follow-up was 52 months. Study endpoints included: ipsilateral neurologic symptoms (INS) (stroke/tia) and death.

Results: There were 126 carotid arteries in 115pts. 88 (70%) had severe (70%-89%) and 38 (30%) had very severe (90%-99%) stenoses (VSS). Demographics: age 73.5 years, 5% chronic kidney disease (CKD), 86% were on statins (28% had LDL <100 mg/dL) and 88% were on aspirin. 31 (25%) patients developed INS during follow-up and most 23/31 (74%) occurred within 12 months of the initial DUS; 45% of INS were strokes. The 5-year actuarial freedom from INS was 70.1%+/−5%. Multivariate predictors of INS included: VSS (HR, 3.23; CI, 1.56-6.76; $P = .002$), CKD (HR, 6.25; CI, 2.05-19.2; $P = .001$), age (HR, .94; CI, .91-0.98; $P = .001$). 41 (33%) patients underwent eventual carotid revascularization (32 CEA, 9 Stent); 56% were performed for INS and 44% for plaque progression. The 5-year actuarial survival was 69.8%+/−4.1%. Multivariate predictors of death included: Age (HR, 1.06; CI, 1.03-1.1; $P = .0001$), COPD (HR, 1.92; CI, 1.08-3.41; $P = .03$) and DM (HR, 5.08; CI, 2.86-9.01; $P < .0001$). Neither statin nor aspirin use was protective in this cohort.

Conclusions: Medically managed patients with ASCAS develop INS early; especially those with >90% stenosis. The natural history of medically treated ASCAS and failure of aspirin/statins to prevent INS supports the continued role of CEA as first line therapy in these patients.

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VS3.

Video Presentation

Novel Carotid Reconstruction Technique

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Background: To demonstrate a novel and simple Carotid Endarterectomy technique that results in a shorter procedure, decreased recovery time, lesser risk of complications and significant cost reduction.

Technical Description: This procedure consists of a mini arteriotomy (12 to 14 mm long) on the front wall of the internal carotid's widest origin "without" transecting the artery completely as in the classical eversion technique.

Eversion endarterectomy is done from below the bifurcation distally into the external and internal simultaneously.

There are several advantages:

a. The back wall of the artery remains intact, therefore less chances of suture line proliferation or recurrence.
b. Easy to prolong arteriotomy and correct a questionable distal endpoint (contrary to the standard complete transection)
c. Avoid prosthetic patch preventing infection, pseudoaneurysm, or suture line bleeding
d. Significant reduced clamping time
e. Considerable reduction in the cost of OR time, anesthesia, PACU, and LOS